

U.S.S.N. 10/811,264

-6-

GKNG 1192 PUS

RECEIVED
CENTRAL FAX CENTER

SEP 28 2006

REMARKS

Claims 1, 3-9, 12-14, and 16-22 are pending in the application. All claims stand rejected. Claims 1, 6-8, 12 and 21 stand rejected under 35 U.S.C. §102 as being anticipated by DE 41 42 194 A1. Claims 3-5, 9 and 13 are also rejected under 35 U.S.C. §103 as being obvious in view of DE '194. Finally, claims 14, 16-20 and 22 stand rejected under 35 U.S.C. §103 as being unpatentable over DE '194 in view of De Monge, U.S. Patent No. 1,902,323.

The Examiner's comments have been carefully considered by Applicant and Applicant submits that the present application, as amended, is in a condition for allowance. For the reasons set forth below, Applicant submits that a *prima facie* case of anticipation or obviousness has not been established in the Office Action.

As an initial matter, Applicant submits that the prior Office Action was correct in noting that claims 1 and 14 contain allowable subject matter over the prior art of record. The art of record includes DE '194. DE 41 42 194 A1, relied upon in the present Office Action, is the published patent application of Patent DE 41 42 194 C2 which was listed in the Information Disclosure Statement filed on March 26, 2004 at the time of filing the present application. This reference was cited in the proceedings concerning the German parent to the present application, but did not form the basis of any rejections with regard to the independent claims in the German application which were similar in scope to the independent claims originally presented herein. Likewise, Examiner Peevey, after considering DE '194, did not reject any of the claims of the present application on the basis of DE '194.

An examination of DE '194 reveals that the device disclosed therein is substantially different form, and does not anticipate or render obvious, the present claims. Critically, DE '194 discloses a convoluted boot with folds of the same height, the boot being designed for use in a rack and pinion steering assembly. Accordingly, the boot of DE '194 only compensates for axial displacements, not angular displacements. That is, the problems addressed by the present invention arise when conventional convoluted boots are operated at an articulation angle. DE '194 is directed

U.S.S.N. 10/811,264

-7-

GKNG 1192 PUS

toward preventing the problem of inwardly flexed bellows folds which occur during compression and elongation of the convoluted boot. DE '194 is unrelated to sealing an articulated joint assembly. DE '194 provides structures on the annular folds to automatically return inwardly flexed bellows folds. Specifically, the angular folds are provided with saw toothed-like steps for achieving the deformation behavior of the convoluted boot as shown in Figures 2 and 4. The saw toothed-like steps shown in Figures 1-4 are in the form of annular rings. Figures 5 and 6 also show that the saw toothed-like steps can be interrupted and provided in segments and be positioned on concentric circles, but the saw toothed-like steps of opposing flanks are arranged on the same radius as shown in Figure 4 and described in claim 7 of DE '194.

In contrast, independent claims 1 and 14 of the present application concern a convoluted boot made of an elastic material for sealing an annular joint chamber of a universal joint. By the foregoing amendments, Applicant has made explicit what was previously implied by the application of the convoluted boot to a universal joint. That is, the claimed convoluted boot is for sealing a universal joint which can carry out articulation movements. The boot includes a plurality of annular folds wherein each of the annular folds has a first outer flank facing the first collar, and a second annular flank facing the second collar. At two adjoining annular folds, the two opposed annular flanks each include a plurality of burls projecting from the uniform annular face (claim 1), or a plurality of indentations which are set back from the uniform annular face (claim 14). The burls or the indentations of one flank and the burls or indentations of the opposing flank are positioned on circles with different radii. In this way, the opposed annular flanks of two adjoining folds are held at a distance from one another by the burls or by the areas between indentations. In both cases, however, noise is minimized when the convoluted boot is articulated, particularly under wet or rainy conditions. Because the burls or indentations are positioned on circles with different radii, it ensures that annular flanks are held at a distance from each other over a wide range of their radial extension. The use of burls is particularly advantageous in that there is only point-contact between the top of the burl and the opposing flank.

U.S.S.N. 10/811,264

-8-

GKNG 1192 PUS

Accordingly, Applicant traverses the suggestion in the Office Action that the form of the raised portions or recesses is an obvious matter of design choice. These claimed features provide advantages which are not provided by the structure disclosed in DE '194. Indeed, DE '194 is not directed toward the same or even a similar problem of that sought to be addressed by the present application.

For similar reasons, independent claims 21 and 22 are novel and non-obvious over DE '194 because they each require that the convoluted boot is for sealing a universal joint which can carry out articulation movements and that an opposed annular flank includes burrs (claim 21) or indentations (claim 22). These configurations, likewise, result in a noise reduction when the boot is articulated and operated under wet conditions. None of the prior art references relied upon in the Office Action disclose or suggest these claimed features. Accordingly, claims 21 and 22 should be allowed over the art of record.

Thus, Applicant submits that a *prima facie* case of anticipation or obviousness has not been established with respect to claims 1, 3-9, 12 and 13 in view of DE '194. DE '194 fails to disclose or suggest at least the following features of these claims: a convoluted boot for sealing a universal joint which can articulate; burrs or indentations on opposed annular flanks of the convoluted boot; and burrs or indentations of two opposed annular flanks being positioned on circles with different radii. For at least these reasons, the rejections under 35 U.S.C. §102 and §103 with respect to claims 1, 3-9, 12 and 13 should be withdrawn. Because claim 21 also requires that the convoluted boot seal the universal joint which can be articulated and that an annular flank include burrs positioned on circles with different radii, the rejection of claim 21 under 35 U.S.C. §102 should also be withdrawn.

Applicant further submits that a *prima facie* case of obviousness has not been established with respect to claims 14, 16-20 and 22 in view of DE '194 and De Monge. The combination of DE '194 and De Monge fails to disclose or suggest several elements of independent claims 14 and 22. Briefly, De Monge discloses a bellows made of a flexible material wherein the bellows include folds and each fold has two flat portions and connecting bends 6b, 6c. The folds are reinforced by transverse grooves

U.S.S.N. 10/811,264

-9-

GKNG 1192 PUS

or ribs. The grooves of adjacent flat portions of the folds are staggered so that the flat portions can be brought together in register ('323 patent, Col. 2, lines 79-86). In this regard, the De Monge reference teaches away from the present application because it is aimed at providing a structure whereby adjacent flat portions can be brought closer together, not held at a distance from one another by raised portions as claimed herein. Further, De Monge fails to disclose or suggest that the raised portions or recesses be positioned on circles with different radii either on one flank only or on both flanks which oppose each other. Further, the bellows De Monge are not intended for an articulating application. The combination of DE '194 and De Monge therefore fails to disclose or suggest Applicant's claimed features that the convoluted boot is adapted to seal a universal joint connection which can articulate; that indentations be provided on one or both opposed annular flanks; and that when indentations are provided on two opposed annular flanks, they be positioned on circles with different radii. For at least these reasons, the rejections of claims 14, 16-20 and 22 under 35 U.S.C. §103 in view of DE '194 and De Monge should be withdrawn.

Applicant further submits that the rejections under 35 U.S.C. §103 should be withdrawn as there is no suggestion or motivation to modify DE '194 to include any features which may be disclosed in De Monge. The fact that one of skill in the art has the capabilities to arrive at the invention is not the test for whether one of skill in the art would have arrived at the invention based upon the teachings of the prior art. *Ex Parte Levengood*, 28 USPQ2d 1300-02 (BPAI 1993). Neither DE '194 nor De Monge are directed toward the problems addressed by the present invention. In other words, there is no teaching, suggestion, or incentive supporting the combination as is required. *In Re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987). Moreover, as noted above, the configuration of the flanks in De Monge result in more surface area of opposed flanks contacting each other, rather than less which is an objective of the presently claimed invention.

U.S.S.N. 10/811,264

-10-

GKNG 1192 PUS

Having overcome all of the objection and rejections set forth in the Office Action, Applicant submits that claims 1, 3-9, 12-14 and 16-22 are allowable because the prior art relied upon does not disclose or suggest each and every feature of Applicant's claimed invention. A Notice of Allowance indicating the allowability of the pending claims should be issued. The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully submitted,

ARTZ & ARTZ, P.C.



Robert P. Renke, Reg. No. 40,783
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: September 28, 2006